for its own mere support requiring therefore no such mechanism, was used in aid of the fossorial actions of the extremities.

As the cervical vertebræ of the Megatherium have their processes comparatively weaker than in the Scelidotherium, and the anterior dorsal spines are relatively shorter, it may be concluded, that whatever were the extent or nature of the fossorial labours of the enormous claws with which it was provided, the head did not co-operate with the digging implements in their especial task in the same degree as in the Scelidothere and Orycterope. At the same time there is no modification of the cervical region of the spine of the Megathere corresponding with those which we have seen to be subservient to the arboreal habits of the sloth, a remark which will not be deemed superfluous by those who have perused the acute observations and arguments adduced by M. Lund in favour of the scansorial character of the extremities of the Megatherium and Megalonyx.

The fragments of the dorsal vertebræ and ribs of the Scelidotherium, which are figured in Plate XX, offer no modifications which need detain our attention ; they closely conform, excepting in the greater relative height of the anterior dorsal spines, already noticed, with the Megatherioid type. The sacrum manifests in its vast expanse, the great development of the posterior transverse processes to join the ischium, the capacious medullary cavity, and wide nervous foramina, a like conformity with the Megatherium, and a corresponding harmony with the disproportionate bulk of the hind legs.

Bones of the Extremities.

The Scapula in its double spine, the osseous arch formed by the confluence of the acromion with the coracoid process, and the substitution of a distinct foramen for the suprascapular notch, agrees with that of the Megatherium : but the span of the acromial arch is relatively wider, and the surface for the articulation of the clavicle is better marked. This articular surface, which is distinctly shewn upon the acromion of both the scapulæ in Pl. XX. is the more interesting, as being the only evidence of the clavicle of the Scelidothere which we at present possess ; but it is enough to prove that this quadruped enjoyed all the advantages in the actions of the fore-extremity, which arise out of the additional fixation of the shoulder-joint afforded by the clavicle—a bone which the extinct Megatherioids are the largest of the mammiferous class to possess in a completely developed state. The form, position, and aspect of the glenoid cavity for the humerus closely correspond with the condition of the same part in the Megatherium. The limits of the acromial and coronoid portions of the arch were still defineable in the

present skeleton, which indicates the nonage of the individual in the unanchylosed condition of most of the epiphyses.

In regard to the presence of a clavicle in the Megalonyx M. Lund has deduced certain conclusions, which, if well founded, would be equally applicable to the present allied species, and to the great Megatherium. I am induced, therefore, to offer a few physiological observations on that bone, which appear to me to lead to a more correct interpretation of its uses and relations in the great mammiferous animals now under consideration.

When the anterior extremities in mammalia are used simply for the purpose of progressive motion on dry land, as in the Pachyderms and Ruminants, or in water, as in the Cetaceans, there is no clavicle ; this bone is introduced between the sternum and acromion, in order to give firmness and fixity to the shoulder-joint when the fore-leg is to discharge some other office than that of locomotion. In these cases, however, the clavicle exists in various degrees of development, and even its rudiment may be dispensed with in some of the actions which require a considerable extent of lateral or outward motion, and of freedom of rotation of the fore-limb. When, therefore, we find the clavicle fully developed in the skeleton of an extinct mammiferous animal, and so placed as to give the humeral articulation all the benefit of this additional mechanism, we may confidently expect that it will afford an insight into the habits and mode of life of such extinct species. M. Lund* has argued from the clavicle of the Megalonyx, that it climbed like a Sloth. "Animals," says Sir C. Bell,† "which fly or dig, or climb, as Bats, Moles, Porcupines, Squirrels, Ant-eaters, Armadilloes, and Sloths, have this bone ; for in them, a lateral or outward motion is required." But in regard to the present problem, we have to enquire whether the clavicle manifests any modifications of form, of strength, or development in relation to the special differences of these several actions, with which its presence is asserted to be associated?

In mammals which fly, the clavicle is always complete : the rabbit, the fox, and the badger are instances of burrowing animals in which the clavicle is absent or rudimental. The presence of a perfect clavicle is not more constant in climbing quadrupeds. The Ai, for example, has an incomplete clavicle, which is attached to the acromion process, and terminates in a point about one-fourth of the distance between the acromion and the top of the sternum, to which the clavicular style is attached by a long slender ligament : the advantage, therefore, which a perfect clavicle affords in the fixation of the shoulder-joint, is lost to this climber *par excellence*. Again, the Bears, which are the bulkiest quadrupeds that are gifted with the faculty of climbing, and this in so perfect a degree that the Sun-bears of the Eastern Tropics may be termed arboreal animals,—these scan-

* Loc. cit. † Bridgewater Treatise, p. 46.